Oil Spill Clean-Up Simulation Lab

Create a model of an oil spill to see how scientists clean up oil spills in our oceans.

Kit contains:

- 1 olive oil packet
- 1 pipette
- 1 cotton ball
- 1 sponge
- 1 data log

You will need: dish soap, a spoon, and a bowl.

MORTON GROVE PUBLIC LIBRARY
6140 Lincoln Avenue, Morton Grove, IL 60053
Youth Info Desk: 847-929-5102 | mgpl.org

INSTRUCTIONS

** This lab may be messy, so it's a good idea to cover your work surface before you begin **

(1) Fill a bowl about halfway with water.

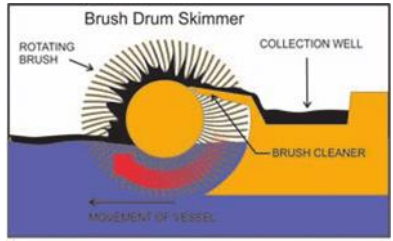
(2) Empty the olive oil packet into the water. Notice what happens with the oil.

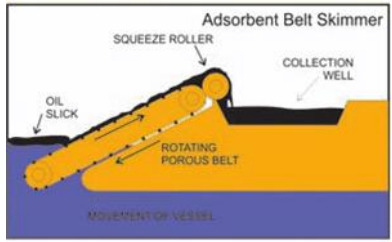
(3) Now is the experimentation part. First, use the various **skimmers** to clean up the oil (sponge, spoon, pipette, cotton ball). Do they work well to clean up the oil? Record your observations on your log.

(4) After you've tried the skimmers, add a drop of dish soap into the water with the remaining oil. This acts as a **dispersant**. What happens to the oil when you add the dish soap? Try using some of the skimmers again. Is it easier to clean up now?

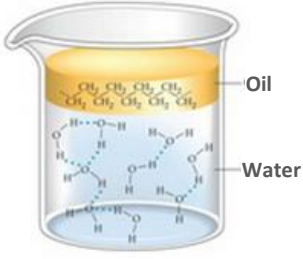
EXTENSION: You can experiment with other materials you have around your house. Some ideas are: paper towels, napkins, or gauze. You can add these onto your log.

WHAT'S HAPPENING? Oil spills happen in oceans or waterways when oil is spilled from ships, factories or pipelines. They can happen for many reasons – natural disasters, equipment malfunctions, carelessness, etc. Oil spills are devastating to the animals and plants that live in the water, so scientists need to clean up the oil as efficiently as possible. They often create a barrier around the oil spill and use dispersants to contain the oil. Then they can use skimmers to remove the oil from the water.





Why don't oil and water mix? Water is a **polar molecule** – that means its structure has a positive charge on one end and a negative charge on the other. Water molecules stick together because the positive end of one molecule is attracted to the negative end of another. An oil molecule is a **non-polar molecule** – that means the charges are evenly balanced. Because of this, the oil molecules are only attracted to other oil molecules and can't mix with the water.



RESOURCES TO LEARN MORE

- *Oil Spill* by Melvin Berger
- *Oil* by Jonah Winter
- https://www.science-sparks.com/why-dont-oil-and-water-mix/
- https://www.steampoweredfamily.com/oil-spill-cleanup-experiment/
- https://oceanservice.noaa.gov/facts/spills-cleanup.html